

*[Subcut]*  
**SPIN VALVE READ HEAD WITH ANTIFERROMAGNETIC OXIDE FILM  
AS LONGITUDINAL BIAS LAYER AND PORTION OF FIRST READ GAP**

**ABSTRACT OF THE DISCLOSURE**

5 An antiferromagnetic stabilization scheme is employed in a magnetic head for  
magnetically stabilizing a free layer of a spin valve. This is accomplished by utilizing  
an antiferromagnetic oxide film below a spin valve sensor in a read region and first and  
second lead layers in end regions and a ferromagnetic film in each of the lead layers that  
exchange couples to the antiferromagnetic oxide film in the end regions. The  
ferromagnetic films are pinned with their magnetic moments oriented parallel to an air  
10 bearing surface (ABS) of the magnetic head. The ferromagnetic <sup>films</sup> ~~film~~ magnetostatically  
couple~~s~~ to the free layer which causes the free layer to be in a single magnetic domain  
state. Accordingly, when the free layer is subjected to magnetic incursions from a  
rotating disk in a disk drive, the free layer maintains a stable magnetic condition so that  
resistance changes of the free layer are not altered by differing magnetic conditions of  
15 the free layer.